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ABSTRACT

The purpose of this study was to examine the relationships among teachers' goal orientations, structure (amount of directiveness provided by the teacher), and observable classroom behaviors to determine: (1) if teachers with different goal orientations differ in verbal and nonverbal affective responses; and (2) if teachers with different goal orientations differ in classroom verbal interactions. A review of the literature treats priorities of teachers in terms of their educational goals, ways in which teachers control classroom activities, and affective behavior of teachers. The verbal and nonverbal behaviors of 31 elementary teachers were enumerated by classroom observation and by questionnaire. Among the findings were: The significant difference in the affective scores for the high and low structure teachers suggests that teachers with high positive affective behaviors exercise less structure in their planning. Teachers oriented toward personal goals did not exhibit significantly higher affective behavior as compared with the other two groups of teachers. No significant differences were found in the social and the information indices for the teachers. Recommendations for further research and for teacher education are given. (CJ)

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THE RELATIONSHIPS BETWEEN TEACHERS' GOAL ORIENTATIONS, STRUCTURE, AND OBSERVABLE CLASSROOM BEHAVIORS

The Problem

Research on teaching in the seventies has focused on academic achievement as a major teaching goal. Teaching effectiveness was measured by student achievement gains using specific methods and curricula under different contextual variables (Brophy & Evertson, 1974; Crawford, Brophy, Evertson, & Coulter, 1977; Erlich & Snavelson, 1978; McDonald, 1976; Rosenshine, 1970; Veldman & Brophy, 1974). In a review of studies on teacher effectiveness, Brophy (1979) said that research on teaching is still in its infancy and suggested that what we need is to develop and solidify a base of information about teaching behaviors. He also added,

> Contemporary researchers studying teaching can point with pride to solid advances in the field, but the knowledge dissipates quickly as one moves away from basic skills instruction in early grades. Obviously, we need attention to different instructional contexts and teaching goals other than achievement gains . . . (p. 740)

Educators have claimed that goals other than academic gains are equally important to pursue. A theoretical framework to study educational outcomes was based on teacher's philosophical views and goal orientation as it pertains to the learner and his environment (Joyce & Weil, 1972). There were four goal orientations: social interaction, information processing, personal, and behavior modification.

They developed their framework on the premise that educational procedures, teaching styles, and behaviors are generated from a general view about educational goals. Good, Biddle & Brophy (1975) also claim that since

teachers perceive their roles and goals in different ways, they are likely to exhibit behaviors that are in congruence with their preexisting goals.

Studies in teacher behavior have tried to determine behaviors along the bipolarities of structured/flexible, formal/informal, and strict/permissive styles of teaching. Results from these indicate that (a) certain teacher behaviors are basic to specific teaching styles (Bossert, 1977; Gage, 1976; Johns, 1968; Kendall & Solomon, 1975, Note 1) and (b) patterns of verbal behaviors create affective tones which can either facilitate or interfere with their teaching goals (Northrop, 1974; Ripple, 1965).

Purpose of the Study

Since teachers' beliefs and goals have been shown to be important factors in determining classroom behaviors, the purpose of this study was to examine the relationships between teachers' goal orientations, structure, and observable classroom behaviors.

Two problems were derived:

1. Do teachers with different goal orientations and structure differ in verbal and nonverbal affective responses?
2. Do teachers with different goal orientations differ in verbal interactions in the classroom?

Definition of Terms

The following terms, which were used in the study, are defined below.

Goal orientations. Goal orientations refer to the four sets of goals professed by the four families as described by Joyce and Weil (1972) in their book

Models of Teaching. A teacher's goal orientation was identified by his/her score on the Teaching Style Q-Sort (Heikkinen, 1978, Note 2). A brief description of the four goal orientations is given below.

Social interaction. Those who profess these goals emphasize relations between man and society, use democratic processes, and give priority to social relations and group problem solving to create a better society (Joyce & Weil, 1972, p. 9).

Information processing. Teachers who are oriented toward these goals are concerned with how a student collects information, processes it, and uses it to solve problems (p. 9).

Personal. Teachers oriented toward personal goals are concerned with personality development and emphasize the process by which the individual constructs and organizes his reality (p. 10).

Behavior modification. The focus here is on attempts to create efficient systems for sequencing activities and shaping behaviors (p. 10).

Structure. The amount of directiveness provided by the teacher determines the degree of structure in the classroom.

High structure teaching is recognizable by the frequency of teacher centered activities. The teacher gives precise directions, provides objectives for the students, and conducts evaluation of their work regularly.

Low structured teaching is recognizable by the frequency of student centered activities. Students are involved in planning their own goals and in choosing their own activities.

A teacher's structure (high or low) was identified by his/her score on

the Teacher Questionnaire (Bennett, 1976).

Observable classroom behaviors. These are the different kinds of verbal interaction in the classroom between the teacher and the student. The verbal moves made for various reasons such as in planning, structuring, giving or receiving information, and those which act as feedback moves were included as observable behaviors. These were enumerated on the observation instrument called the Teacher Innovator System (Joyce, Guillion, Weil, Wald, McKibbin, & Feller, 1972, Note 3). Three indices, social, information, and personal, were calculated for each teacher from verbal interaction in his/her classroom.

Affective responses. These are the verbal and nonverbal behaviors which are used in the classroom by the teacher to enhance certain desired behaviors. Words of praise, positive eye contact, note of approval were positive affective responses. Words of criticism, rejection of ideas and frown were negative affective responses. Their frequency was noted on the Teacher Affective Feedback Guide (Bruininks, 1978) and a single score called affective score was calculated by computing the ratio of positive to negative responses.

One of the major directions of research on teaching is to account for teaching behaviors in terms of teachers' educational goals. To this end, the following hypothesis were put forward.

Research Hypotheses

1. The mean affective score for low structure teachers will be greater than that for high structure teachers.
2. The mean affective score for personal teachers will be greater than that for either social interaction or information pro-

cessing teachers.

3. There will be an interaction between structure and goal orientation for the mean affective score. Low structure personal teachers will have a higher mean affective score as compared with high structure personal, low structure social interaction, high structure social interaction, low structure information processing, and high structure information processing teachers.
4. The mean score on the social index for social interaction teachers will be greater than for the infomation processing or personal teachers.
5. The mean score on the information index for the information processing teachers will be greater than for either social interaction or personal teachers.
6. The mean score on the personal index for personal teachers will be greater than for either social interaction or information processing teachers.

The Review of Literature

The review of literature encompasses three major areas. The first section looks at the priorities of teachers in terms of their educational goals. The second section pertains to the manner in which teachers control activities in the classroom, and attempts to draw a profile of teachers who practice different ways of structuring their classes. The last section describes affective behaviors of teachers.

Teaching Goals

Studies focusing on teachers' goals and practices suggest that their educational beliefs powerfully influence their behaviors (Brown, 1970; Ogden, 1975). Gooding (1964) claimed that it is possible to infer teacher's goals and beliefs, with a high degree of reliability, from interviews and observations of their classroom behaviors.

A framework of educational goals was delineated by Joyce and Weil (1972) in their book Models of Teaching. After viewing many models of teaching, each was examined for its focus, the type of teaching it typifies, the kinds of norms which are encouraged, and its instructional and nurturant effects. These models were subsequently grouped together on the basis of the "sources of reality which the theorists drew on as they focused on the learner and his environment" (p. 8). Four teaching families were thus organized to represent different educational goals. These are; social interaction, information processing, personal, and behavior modification. The four major goal orientations lead to a variety of teaching models which promote different kinds of learning. Some models are similar to others in process, others in the

social climate they create, and still others in the content they stress. The information processing, social interaction, and personal models roughly parallel academic, social, and personal goals but the correspondence between them is not a one-to-one. Instead, it is the question of emphasis and the extent to which objectives are pursued directly or nurtured" (Joyce, 1978, p. 32).

To ascertain the goal orientation of teachers, Heikkinen (1977, Note 4) developed the Teaching Style Q-Sort (TSQS). When the TSQS was given to 97 teachers, discriminant analysis of data yielded results to report that teachers with more teaching experience scored significantly lower on the personal goals orientation. The revised version of the TSQS was administered to 22 secondary science teachers and 61 nonscience teachers (Heikkinen, 1978b, Note 5). Science teachers scored significantly higher on information processing goals and nonscience teachers on personal goals.

To prepare preservice teachers to use innovative and varied methods of teaching, a training program was set up at the Teachers College, Columbia University in the early seventies. One of the components of this program was based on the ideas of Models of Teaching. Trainees were expected to examine theory and practice several models of teaching in microteaching laboratories with small groups of students. They took turns in observing each other and in rendering feedback. To provide trainees with a means of analyzing teaching practices, an interaction analysis system called Teacher Innovator System was developed (Joyce et al., 1972). The Teacher Innovator System (TIS) categorises verbal moves of the teacher and students into 19 units: eight in

structuring, five in information processing, and six in feedback.

Twenty-six teachers were trained to teach three models, one each from social interaction, information processing, and personal families. Nine ratios or indices of interaction were derived from the TIS to compare teaching behaviors specific to the three models of teaching (Joyce, Weil and Wald, 1973). The following changes between pretraining and the posttraining behaviors were observed:

1. Student participation in the structuring of procedures dropped significantly for the information processing model.
2. The proportion of middle and higher levels of cognitive activity increased significantly for the information processing model.
3. Teacher talk dropped about 15% and negotiated procedures by either the teacher or the student rose significantly for the social interaction model.
4. There was significantly less talk by the teacher, less negotiating, and less positive sanctioning for the personal model.

In the same study, Joyce and others attempted to determine the extent to which personality and values were related to the success of the trainees in learning to teach the models and found that personal values do not interfere greatly with training, except in social interaction models. From their pretest scores it was determined that normal teaching styles contained few elements characteristic to specific models of teaching, but they did not attempt to relate this to teachers' preferred teaching goals.

Teachers' selection of materials and teaching strategies depend, to a large extent, on how they preceive their function in the educational framework. Reports from relevant studies in this area are summarized below:

1. Personal teachers taught structured, yet informal classrooms (Seif, 1979).
2. Close-minded traditional teachers exhibited significantly greater traditional behaviors as compared with open-minded progressives (Kremer, 1978).
3. Teachers in traditional schools differed sharply from those in open schools in their choice of instructional methods and evaluation procedures (Applebee, 1976; Baker, 1977; Wright, 1975).

Research in the area of teacher goals shows that differences in teachers' classroom behaviors may depend, to some extent, on their educational goals. It was therefore hypothesized that teachers who professed different goal orientations, namely, information processing, social interaction, and personal, would demonstrate behaviors typical to these families of teaching.

Teacher Control and Degree of Structure

Teachers use many ways to achieve the outcomes they have set for their students and are therefore influential in controlling the events in the classroom. The type of control that the teacher employs has been described on a continuum from high to low structure and synonyms such as dominating/socially integrative, formal/informal, authoritarian/democratic, and strict/permissive methods of teaching have been used to describe the type of structure exer-

cised by the teacher. From the studies in this field, a profile of high and low structure classroom begins to emerge, suggesting that teachers manifest different types of behaviors depending upon how they decide to structure their classroom.

Researchers in this area have used primarily observational techniques to report the following:

1. Dominating teachers were found to determine in detail, a child's activity and seating arrangement, and made decisions regarding rationing of materials (Anderson & Brewer, 1945).
2. Premissive teachers asked significantly more questions and gave more answers as compared with strict teachers. Strict teachers imposed more rules and used significantly more negative reinforcers (Halperin, 1976).
3. High structure classroom has low child activity and high proportion of control (Morrison, 1979).
4. The degree of structure does not have any relationsihip to the degree of emphasis on subject matter (Wilder, 1968).

Other researchers have reported similar patterns in high and low structure classroom (Applebee, 1976; Kendall & Solomon, Note 1).

Questionnaire techriques are rarely used to determine classroom structure. One such instrument was developed in Britain and which differentiated teaching styles from formal to informal (Bennett, 1976). It covered six areas: classroom management and organization, control, curriculum planning, instructional

and evaluation strategies, and motivational techniques. This was administered to the teachers in 841 schools in Britain and the following results were yielded in analysis:

1. There was no significant difference in teaching styles among the three levels of teaching: third grade, third and fourth mixed, and fourth grade.

2. Of the most formal teachers, all taught one subject at a time and did not allow pupils the choice of seating arrangement.

3. The most informal teachers taught many subjects at a time, allowed pupils to choose their work, and let them decide their own seating arrangement.

Results from studies on teaching goals and teacher control suggest that in the analysis of teacher behavior, two variables must be considered: teachers' perception of their goals of education, and the amount of control they use in achieving these goals. These two were therefore used as independent variables in this study.

Affective Behaviors

It was suggested in the previous section that the teacher is influential in controlling classroom events and thus in setting the instructional climate. Classroom climate can influence both cognitive and affective learning of students. Teachers' goals for instruction can therefore either be facilitated or hindered by (a) the feeling of warmth, (b) moderate expressions of emotions and feelings, and (c) reducing frustration and anxiety in the learning situation (Ripple, 1965).

The affective tone of the teacher which sets the climate in the classroom has been measured by many observation instruments described by Borich and Madden (1977), Dunkin & Biddle (1974), and Simon & Boyer (1967). One widely used instrument is the Flanders' Interaction Analysis Categories System (Flanders, 1970). This scheme defines teacher's and students' verbal behaviors into ten categories, four of which measure teacher's talk which has indirect influence and three measure teacher's talk which has direct influence. These behaviors are enumerated on a time unit and a ratio of indirect to direct talk gives a measure of indirectedness or the affective tone of the class. This instrument has been used in various studies with conflicting results (Dunkin & Biddle, 1974). One of the reasons may be that it is inadequate in measuring teacher behavior since it codes only the verbal and not the nonverbal behaviors.

The observation instruments described by Simon & Boyer measure verbal, nonverbal or both behaviors in four dimensions. They are (a) how a teacher responds to students' ideas, (b) how a teacher responds to students' initiation of classroom control, (c) how a teacher responds to students' nonverbal behaviors, and (d) how a teacher responds to students' expression of feelings.

A teacher can react to the four dimensions in two ways, accepting or rejecting them. Acceptance of ideas, work product, or behaviors will act in positive ways to create an affective tone in the classroom and will reinforce the students positively. Rejection of the same will act as negative reinforcers and will lower the affective tone of the class. It is essen ial

therefore to consider teachers' verbal and nonverbal behaviors in all four dimensions in investigating the affective tone of the classroom.

The teacher behaviors described above lead to suggest that teachers who are low structure may try to set the classroom environment by not only the way they organize their materials and classroom procedures but also by the affective tone of the classroom. It was therefore hypothesized that low structure teachers will have significantly greater positive to negative affective responses as compared with the high structure teachers.

The models of teaching in the personal family emphasize the nurturant potential of the educational environment which gently nudges the learners and encourages them to develop their own individuality (Joyce & Weil, 1972). The characteristics of the teacher using the personal models are very important. Ideally, it requires a teacher with a warm personality, skilled in interpersonal relationships, and one who creates a nonthreatening and open atmosphere in the classroom. It can then be seen that these teachers would try to create such an environment by their verbal and nonverbal behaviors. It was further hypothesized that personal teachers would have a higher affective score as compared with the social interaction and the information processing teachers.

Method

Sample Selection

Goal orientation (social interaction, information processing, or personal) and structure (high or low) of 114 elementary teachers were identified using

two self-report instruments. Thirty-one teachers were subsequently selected for observations.

Revised Teaching Style Q-Sort (R-TSQS). Teachers' goal orientations were measured by this instrument. The R-TSQS (Heikkinen, 1978a, Note 2) consists of 16 statements of philosophy and methodology representing goal orientations of the four families described by Joyce and Weil (1972). Each family is represented by four statements. Teachers were asked to rank the statements according to whether they were "most like" or "most unlike" their teaching, using the Q-sorting technique. Each respondent had four scores from this instrument, one score for each family. From an earlier study using the R-TSQS (Heikkinen, 1978a, Note 5), the means and standard deviations for each of the four families was known (Table 1).

Table 1

Means and Standard Deviations for R-TSQS Scores by Goal Orientation

Goal orientation	Mean	Standard Deviation
Social interaction	12.6	1.9
Information processing	11.8	2.2
Personal	12.1	2.8
Behavior modification	11.5	2.1

Note. $n = 83$ for each group.

In this study, a teacher was said to have a particular goal orientation

if his/her score for that family was at least one standard deviation above the mean, from Table 1, for only that family. Only one teacher had scores which fell above one standard deviation from the mean for two families and was therefore not included in this study. Of the rest, 18 teachers had orientation towards social interaction goals, 21 toward information processing goals, and 7 teachers had personal goals.

Teacher Questionnaire. The type of structure that the teacher used was identified by his/her score on the Teacher Questionnaire (Bennett, 1976). Only the second part of the instrument dealing with teaching methodology was used. Some of the words and phrases were modified to suit the American language and to simplify scoring. The modified version of the Teacher Questionnaire had 21 questions (Appendix A). Each question had a high structure and a low structure response and teachers were asked to circle the one which they used more often. A maximum score of 21 and a minimum of zero was possible from this instrument.

The mean score for 114 teachers on the Teacher Questionnaire was 13.5. Teachers who scored above the mean were considered to be high structured and those who scored below this were considered to be low structured (Table 2).

Table 2

Distribution of Teachers Considered for Observations by Goal Orientation and Structure

Goal orientation	High structure	Low structure
Social interaction	7	11
Information processing	10	11
Personal	2	5

Six teachers from each of the four groups in the social interaction and information processing family were selected using a random digit table, and all seven teachers from the personal family were included for observations. The final sample then consisted of 31 teachers.

Classroom Observations

One problem with collecting information about teacher behavior has been that of stability of their classroom behaviors. Teachers, in general, do not exhibit stable behaviors if the frequency of the behavior is low. However, correlation studies to measure stability of teacher behaviors from one year to the next yeilded significantly stable behaviors, especially in the categories of praise and negative reinforcers (Campbell, 1972; Crawford, 1976). Other researchers have reported that (a) summed scores or related behaviors, rather than specific behaviors, appear to be stable (Rosenshine, 1978), and (b) the most stable dimension appears to be the affective one (Joyce, 1975).

The next question was to define the time period for observation which would yield enough information about consistent teacher behaviors. Simon and Boyer (1974) maintain that two or three 30 minute observations are sufficient.

Observational Procedures

The sample of 31 elementary teachers was observed during the fall of 1979. Each teacher was contacted prior to actual observations, and a suitable time was arranged for observations. Each teacher was observed for a period of 20 - 30 minutes each of three times, and the following guidelines were adhered to:

1. No teacher was observed all three times on the same day. In three cases, the same teacher was observed twice on the same day; in all

other cases each teacher was observed on three different days.

2. Teachers were observed during both morning and afternoon except in two cases where the teachers did not teach in the afternoon.
3. Teachers were observed teaching different subjects. No teacher was observed teaching the same subject all three times.
4. Whole class teaching and/or small group teaching were observed.

Two observation instruments were utilized for coding classroom behaviors. The Teacher Affective Feedback Guide (TAFG) (Bruininks, 1978) was used for enumerating teachers' verbal and nonverbal affective responses and the Teacher Innovator System (Joyce et al., 1972) for coding classroom verbal interactions.

To establish reliability, the investigator observed with another observer, films and videotapes of classroom interactions, and visited actual classrooms to enumerate verbal and nonverbal responses. At the end of a two month training period, the Pearson Product Moment Correlation for the two trainees was .94.

During observations, the observer sat in the back of the room, and coded both verbal and nonverbal affective responses using the TAFG. The affective score for each teacher was calculated by the ratio of the total number of positive to the total number of negative affective responses. The same segments of observation were audio recorded and classroom verbal interactions were coded on the Teacher Innovator System to calculate three indices of behaviors. These were:

1. Social Index: Sum of the total negotiated structuring and total student talk (expressed as proportion of all talk).
2. Information Index: Sum of levels 1, 2, and 3 information processing (expressed as proportion of all information processing).
3. Personal Index: Sum of digression (expressed as proportion of all talk) and opinions (expressed as proportion of information processing).

The first index was derived by combining the ratios from Joyce, Weil and Wald's study (1973) with teacher trainees. The information processing and personal indices were arrived at with consultations with educators who are familiar with the framework of Joyce and Weil's theory and have used it in their research.

Data Analysis

Observational data were analyzed employing (a) a two-way ANOVA for the affective score using goal orientation and structure as independent variables, and (b) three one-way ANOVA's for the three indices of behaviors using goal orientation as the independent variable.

Results

This section summarizes the findings from the analysis of data. Results from testing each hypothesis are given separately. All hypotheses were tested at the .05 level of significance.

Affective Score

Hypothesis 1. There is no statistically significant difference in the mean affective score, as measured by the TAFG, between

the high structure and low structure teachers.

The analysis of variance presented in Table 3 indicates the probability under the null hypothesis for the observed difference in the mean affective score between the two types of teachers (high and low structure) to be equal to .044. Thus the null hypothesis was rejected.

Table 3

Two-Way Analysis of Variance for Affective Score by Goal Orientation and Structure

Source of variation	df	Mean square	F	F probability
Main effects:				
Structure	1	8.013	4.49	.044
Goal orientation	2	0.410	0.23	.796
One-way interaction:				
Structure x goal orientation	2	0.029	0.02	.984
Residual	25	1.785		
Total	30			

The mean affective score for low structure teachers was 3.427 and that for high structure teachers was 2.302 (Table 4). This indicates that teachers who used different degrees of structure to organize their materials, curricula, and evaluation procedures demonstrated significantly different affective behaviors.

Low structure teachers used a greater ratio of positive to negative affective responses than high structure teachers.

Hypothesis 2. There is no statistically significant difference in the mean affective score, as measured by the TAFG, among the social interaction, information processing, and personal teachers.

Table 4

Mean Affective Score by Goal Orientation and Structure

Goal orientation	High structure	Low structure	Total
Social interaction	2.406 (6)	3.420 (6)	2.913
Information processing	2.142 (6)	3.187 (6)	2.664
Personal	2.475 (2)	3.726 (5)	3.368
Total	2.302	3.427	

Note. Numbers in parentheses indicate the number of subjects in the group.

The analysis of variance presented in Table 3 indicates the probability under the null hypothesis for the observed difference in the mean affective score between the three types of teachers to be .796. Thus the null hypothesis was not rejected.

The mean affective score for social interaction, information processing teachers, and personal teachers was 2.913, 2.664, and 3.368, respectively (Table 4). This means that teachers who professed social interaction, information processing, or personal goal orientations did not differ significantly in the proportion of positive affective responses to negative affective re-

sponses in the classroom.

Hypothesis 3. There is no statistically significant interaction between goal orientation and structure for the mean affective score, as measured by the TAFG, for the teachers.

The analysis of variance presented in Table 3 indicates the probability under the null hypothesis of the observed difference between the six groups of teachers to be .984. The null hypothesis was therefore not rejected. There was no significant interaction between goal orientation and structure in the mean affective score for the teachers. Table 4 gives the mean affective score for these six groups of teachers.

Verbal Behaviors

Classroom verbal behaviors were explored for teachers with different goal orientations.

Hypothesis 4. There is no statistically significant difference in the mean score on the social index, as measured by the TIS, among the social interaction, information processing, and personal teachers.

On the social index, social interaction teachers had a mean score of .382, information processing teachers scored .335, and personal teachers scored .382 (Table 5). The analysis of variance presented in Table 6 indicates the probability under the null hypothesis for the differences in the mean score on the social index for the three groups of teachers to be equal to .235. Therefore the null hypothesis was not rejected.

This points out that in these classrooms, all three groups of teachers

allowed approximately the same proportion of student talk and shared classroom decisions with their students to the same extent.

Table 5

Means for TIS Scores by Goal Orientation

Behavior indices	Goal orientation		
	Social interaction	Information processing	Personal
Social index	.382	.335	.382
Information index	.791	.862	.785
Personal index	.054	.040	.096

Table 6

Analysis of Variance for Social Index by Goal Orientation

Source of variation	df	Mean square	F	F probability
Main effects	2	.008	.153	.235
Residual	28	.005		
Total	30			

Hypothesis 5. There is no statistically significant difference in the mean score on the information index, as measured by the TIS, among the social interaction, information processing, and personal teachers.

The analysis of variance presented in Table 7 indicates the probability under the null hypothesis of observing the difference in the mean scores for the three groups of teachers to be equal to .205. Therefore the null hypothesis was not rejected.

On the information index, the social interaction group had a mean score of .791, information processing teachers scored .862, and personal teachers scored .785 (Table 5). As expected, information processing teachers scored higher than the other two groups on this index, but this difference was not statistically significant. This implies that all three groups of teachers emphasized the cognitive and the information processing domain to a similar extent.

Table 7

Analysis of Variance for Information Index by Goal Orientation

Source of variation	df	Mean square	F	F probability
Main effects	2	.0200	1.68	.205
Residual	28	.0119		
Total	30			

Hypothesis 6. There is no statistically significant difference in the mean score on the personal index, as measured by the TIS, among the social interaction, information processing, and personal teachers.

The analysis of variance presented in Table 8 indicates the probability of observing this difference, under the null hypothesis, between the three groups of teachers to be equal to .026. Thus the null hypothesis was rejected.

Table 8

Analysis of Variance for Personal Index by Goal Orientation

Source of variation	df	Mean square	F	F probability
Main effects	2	.0071	4.18	.026
Residual	28	.0017		
Total	30			

On the personal index, social interaction teachers had a mean of .054, information processing teachers scored .043, and personal teachers scored .096 (Table 6). The three groups of teachers therefore differed significantly on this index.

In order to find out which of the three groups of teachers differed from the other groups on the personal index, pairwise comparisons were calculated. The procedure used was the Duncan's New Multiple Range procedure, which is a very powerful test and has a "high probability of declaring a difference when

there is actually a difference between the population means" (Ott, 1976, p. 39[illegible]). It can also be adapted for unequal size groups.

The results from the analysis using Duncan's procedure indicate that personal teachers were significantly different from both other groups on the personal index. As anticipated, personal teachers scored significantly higher on this index as compared with either the information processing or the social teachers. This means that personal teachers demonstrated sharing of personal experiences and opinions,and digressions from the format of the lesson to a significantly greater proportion than did the social interaction or the information processing teachers.

Conclusions

Affective Behaviors

The statistically significant difference in the mean affective score for the high and low structure teachers may either suggest that teachers with high positive affective behaviors choose to exercise less structure in how they plan their curricula, materials, and evaluation procedures, or it may suggest that teachers who choose to exercise less structure, or believe they do, also choose to be more positive in the affective responses they demonstrate.

Personal teachers did not exhibit significantly higher affective behaviors as compared with other two groups of teachers, as had been anticipated. This may indicate that affective behavior is independent of the goals that teachers profess. This is partly in congruence with the results of Halperin's (1976) study where goals and behaviors of first grade teachers were investigated. Halperin found that teachers who professed either academic or social/

emotional goals did not differ significantly in categories of behaviors such as praise and imposing rules.

It has also been noted that elementary students from high socioeconomic status groups do best under learning conditions which are demanding, and where the teacher occasionally criticizes or punishes students when necessary; low socioeconomic status students perform best under learning situations where the teacher is structured, yet supportive and warm, and makes use of verbal praise (Crawford, Brophy, Evertson, & Coulter, 1977). If high structure elementary teachers, as this study has indicated, use affective behavior or positive responses less often, then teacher education colleges must make them aware of the need to consider both structure and affective behaviors when planning to teach students from different socioeconomic groups.

The values of the mean affective score summarized in Table 4 are all greater than one indicating that teachers use positive affective responses more often than negative affective responses.

The absence of interaction between the two variables may indicate that teachers' affective behavior is a function only of the type of structure and not of certain combinations of goal orientation and degree of structure.

Verbal Behaviors

The fact that a very small proportion of classroom verbal interaction was spent in exhibiting behaviors that are typical of the personal goals may indicate one or more of the following:

1. Information processing takes precedence over the personal domain in the elementary grades. Applebee (1976) indicated that elementary teachers believed that individualization should be delayed until basic language and number skills were developed.
2. Teachers practice personal behaviors in qualitative ways which were not measured. Teachers' tone of voice and different uses of praise may be important factors in influencing the quality of students' responses and their attitude toward the lesson in progress. The instrument used in this study was not sensitive to measure these variables.
3. Due to the heuristic nature of personal goals which requires sensitivity to students and interpersonal and intrapersonal skills on the part of the teacher, the best way to achieve these goals has not been defined clearly. It may be possible that teacher training colleges do not equip students with the necessary tools to achieve these goals. Mere lectures about creativity, social values, and interpersonal skills may not be effective if the training does not include these processes.

No significant differences were found on the social and the information indices for the three groups of teachers. This did not support the research hypotheses. Failure to reject these two null hypotheses indicates that either (a) teachers do not act according to their beliefs regarding social interaction and information processing goal orientations or (b) teachers manifest

their goals in behaviors that were not studied here. If the former is true, then inservice programs and intervention techniques could be used to make teachers aware of their goals and practices (Robertson, 1969). If the latter is true, more intensive studies will need to be conducted to investigate behaviors which better typify the information processing and the social interaction goals.

Recommendations

Three recommendations are suggested for further research.

1. Other variables, such as the different uses of teachers' praise and the tone of the voice should be included to inquire further into behaviors of teachers with different goal orientations.
2. The present study has established a relationship between the degree of structure in the classroom and teachers' affective behaviors. A subsequent area of research would be to further inquire if the teachers' goal orientation, structure, and affective behavior have any effect on students' attitudes and achievement.
3. Investigations need to be conducted to determine if feedback to the teachers and intervention techniques result in bridging the gap between their priorities and practices regarding the structure they use and goal orientations that they profess in their classrooms. Observations of the methods teachers use in structuring the instructional setting will serve to further increase the validity of the Teacher Questionnaire.

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APPENDIX A

TEACHER QUESTIONNAIRE (REVISED)

The way in which teachers arrange their classrooms and adopt methods of teaching, naturally reflect factors such as the materials available to them and their own preferences for certain teaching styles.

This questionnaire is being used in an attempt to obtain information about the methods of teaching used in classrooms and is in two parts. Part I asks for background information about the teacher and Part II is designed to cover various aspects of classroom organization.

It will take you no more than 10 minutes to complete this questionnaire, and all replies will be held in strict confidence. The items in the second part of the questionnaire require you to choose one answer from the two provided. We realize that this is an over simplification and that teachers have to adapt their methods to the circumstances. Please try to answer the questions in Part II as objectively as possible

---

Part I

Name _____

Name of School _____

Male _____ Female _____

Years of teaching experience _____

Highest degree earned B.S.+_____ 5th year_____
M.S.+_____ M.Ed._____
Ed. Spec._____

Grade level(s) you are teaching_____

Part II

Teaching Methods Adopted (circle A or B)

1. Do pupils decide for themselves where they sit in the classroom?

   No . . . . . A
   Yes . . . . . B

2. Are the seats usually arranged so that pupils sit

   separately or in pairs . . . . . A
   in groups of 3 or more . . . . . B

3. Do pupils stay in the same seats or groups for most of the day?

   No . . . . . A
   Yes . . . . . B

4. Do you usually allow your pupils to move around the classroom

   generally whenever they wish? . . . . A
   only during certain kinds of activities? . . . . . B

5. Do you allow your pupils to talk to one another

   usually whenever they wish? . . . . . A
   only during certain kinds of activities? . . . . . B

6. Do you expect your pupils to ask your permission before leaving the room?

   No . . . . . A
   Yes . . . . . B

7. Do you expect your pupils to be quiet most of the time?

   No . . . . . A
   Yes . . . . . B

8. Do you use a timetable for organizing the week's work?

   No . . . . . A
   Yes . . . . . B

9. For basic subjects do you more often use

   text books? . . . . . A
   materials prepared by you? . B

10. Do you require that your students memorize their spelling/multiplication tables?

No . . . . . A
Yes . . . . . B

11. Teaching sometimes requires reference materials. Do you normally

supply most of this material for your pupils? . . . . . A
ask the pupils to find their own? . . B

12. Do you regularly give your pupils homework?

No . . . . . A
Yes . . . . . B

13. When pupils are working in groups, do you

assign the work to them? . . . . . A
allow them to make their own choice? . . . . . B

14. On which aspect of number work do you place <u>more</u> emphasis

developing computational skills through graded exercises . . . . . A
exploring concepts with materials? . . B

15. Which do you encourage more often in writing English?

fluency and originality? . . A
grammatical accuracy? . . . B

16. Do you put an actual mark or grade on pupils' work?

No . . . . . A
Yes . . . . . B

17. Do you correct most of their spelling and grammatical errors?

No . . . . . A
Yes . . . . . B

18. Are stars, or their equivalent, given to pupils who produce the best work?

No . . . . . A
Yes . . . . . B

19. Do you give your pupils an arithmetic or spelling test at least once a week?

No . . . . . A
Yes . . . . . B

20. Do you have end of semester tests?

No . . . . . A
Yes . . . . . B

21. For discipline problems, do you find verbal reproof and/or reasoning sufficient normally?

No . . . . . A
Yes . . . . . B